

**Support to AIRS Validation**

**from**

**EUMETSAT**

# AIRS Validation Support

- Augmentation of AIRS validation network with two additional validation sites in Europe
- Provision of best state of the atmosphere estimates during AIRS overpasses
- Characterisation of the atmospheric state with an accuracy of 0.5 K in temperature and 10% in absolute humidity at a vertical resolution of 0.5 km

# Phase 1: Validation Site Preparations

- Duration: 3 months, prior to Aqua launch
- Analysis of existing infrastructure and augmentation if necessary
- Elaboration of an Experiment and Data Processing Plan
- Demonstration of functionality of the validation site assuming two AIRS overpasses, including collection of data, processing the data into best-estimate state of the atmosphere, formatting, and delivery of the data

## Phase 2: Operational Measurements

- Duration: 3 months, beginning 6 months after Aqua launch (TBC)
- Collection of measurements as described in the Experiment and Data Processing Plan
- Processing of data into best estimate state of the atmosphere, formatting and delivery of data
- Compilation of final report summarizing the exercise and drawing conclusions/recommendations with respect to future validation campaigns, in particular for IASI

# Garmisch (744 m asl) / Zugspitze (2964 m asl)

## 47.5°N, 11°E

- Principal Investigator: Ralf Sussmann, Fraunhofer Institute for Atmospheric Environmental Research (IFU), Germany
- Co-Investigator: Claude Camy-Peyret, Laboratoire de Physique Moléculaire et Applications (LPMA), France
- Ground station (Garmisch) and mountain station (Zugspitze) in close horizontal neighbourhood (6 km)
- Launch of GPS-navigated radiosondes at ground station
- FTIR solar spectroscopy at mountain station
- Water vapour DIAL at mountain station
- GPS measurements of integrated water vapour at ground and mountain stations
- Surface meteorological measurements and observations at ground and mountain stations

## Measurement Accuracies

FTIR	DIAL	GPS	Radio	Sonde	Sfc Met	< 10%	< 3 mm	H <sup>2</sup> O Slant	Column	< 1 mm

## Toulouse (154 m asl) 43.5°N, 1.4°E

- Principal Investigator: Alain Dabas, Centre National de Recherches Météorologiques (CNRS), France
- Ground station at Météo-France in Toulouse
- GPS-navigated radiosondes
- GPS measurements for integrated water-vapour measurements
- Ceilometer for cloud-base height measurements
- Surface meteorological measurements and observations

## Measurement Accuracies

Radiosonde	GPS	Ceilometer	Sfc Met	1 mm H <sub>2</sub> O Profile	3% Temperature Profile